

ABSTRACT

A complete automatic sprite generation system uses first-order prediction for an initial estimation, delayed elimination for outlier rejection, and field-based sprite generation for an interlaced source. 5 Optionally, higher-order prediction for the initial estimation may be used to handle more complicated motion. The invention is useful for generating sprites, e.g., for 3D sequences, stock tickers, interactive 10 advertising and other uses. The invention addresses outlier and fast motion problems that are not handled by the existing MPEG-4 scheme. Automatic sprite generation is provided by performing shot detection (e.g., panning or zooming) on the input images to provide a group of 15 successive images that share a common scene for use in forming a sprite. The initial estimation of motion parameter data for forming the sprite is improved by using the motion parameter data of at least two previous input images. Delayed outlier rejection is performed in 20 two steps by eliminating pixels whose error increases in successive sprite iterations. For interlaced input images, a sprite and set of motion parameters are encoded and transmitted for each field separately, then decoded and combined at a presentation engine at a 25 decoder.